

Serial No. 10/360,023

- 2 -

60524aka

CLAIM AMENDMENTS

1. (Currently Amended) A reconfigurable frequency selective surface (FSS) comprising:  
a plurality of conducting patches supported on a first surface of a dielectric material; and  
a plurality of switches, each switch electrically interconnecting at least two of the plurality of conducting patches when the switch is selected,

wherein a first ensemble of switches is selectable so as to provide a first configuration of electrically interconnected conducting patches, [[and]]

a second ensemble of switches is selectable so as to provide a second configuration of electrically interconnected conducting patches, and

the reconfigurable FSS being part of an artificial magnetic conductor (AMC) ground plane of an antenna, the AMC further including the dielectric material and a conducting sheet on a second surface of the dielectric material.

2. (Original) The reconfigurable FSS of claim 1, wherein the first configuration of electrically interconnected conducting patches provides a first resonance frequency, and

the second configuration of electrically interconnected conducting patches provides a second resonance frequency.

3. (Original) The reconfigurable FSS of claim 1, wherein the first configuration of electrically interconnected conducting patches comprises a repeated unit cell pattern of electrically interconnected conducting patches.

4. (Original) The reconfigurable FSS of claim 3, wherein the first configuration of electrically interconnected conducting patches comprises a two-dimensional array of unit cell patterns of electrically interconnected conducting patches.

5. (Original) The reconfigurable FSS of claim 1, wherein the plurality of conducting patches is disposed in a square or rectangular grid pattern on the first surface of the dielectric material.

GIFFORD, KRASS, GROH, SPRINKLE, ANDERSON &amp; CITKOWSKI, P.C. 2701 TROY CENTER DR., SUITE 330, P.O. BOX 7021 TROY, MICHIGAN 48007-7021 (248) 647-6500

Serial No. 10/360,023

- 3 -

60524uka

6. (Original) The reconfigurable FSS of claim 1, wherein each conducting patch has a square or rectangular shape.

7. (Original) The reconfigurable FSS of claim 1, wherein the plurality of conducting patches is arranged in a plurality of fractal arrays.

8. (Currently Amended) The reconfigurable FSS of claim 1, ~~wherein a second surface of the dielectric material supports a conducting sheet, wherein the first configuration provides an artificial magnetic conductor having a first resonance frequency~~ wherein the FSS has a doubly periodic structure.

9. (Previously Presented) A reconfigurable frequency selective surface (FSS) comprising a plurality of conducting patches, the conducting patches being supported on a first surface of a dielectric material,

the conducting patches being selectively electrically interconnected in an electrical interconnection configuration,

wherein a resonance frequency of the frequency selective surface is adjustable through a modification of the electrical interconnection configuration,

the reconfigurable FSS being part of an artificial magnetic conductor (AMC), the AMC further including the dielectric material and a conducting sheet on a second surface of the dielectric material.

10. (Original) The reconfigurable FSS of claim 9, wherein the FSS provides a first resonance frequency corresponding to a first electrical interconnection configuration, and a second resonance frequency corresponding to a second electrical interconnection configuration,

wherein the first electrical interconnection configuration and the second electrical interconnection configuration are electrically selectable.

11. (Original) The reconfigurable FSS of claim 10, wherein the first resonance frequency is an

GIFFORD, KRASS, GROH, SPINKLE, ANDERSON & CITKOWSKI, P.C. 2701 TROY CENTER DR., SUITE 330, P.O. BOX 7021 TROY, MICHIGAN 48067-7021 (248) 647-6000

Serial No. 10/360,023

- 4 -

60524aka

integer multiple of the second resonance frequency.

12. (Original) The reconfigurable FSS of claim 9, wherein the non-conducting surface is a first surface of a dielectric layer.

13. (Original) The reconfigurable FSS of claim 12, wherein a second surface of the dielectric layer supports an electrically conductive layer.

14. (Previously Presented) The reconfigurable FSS of claim 9, wherein the FSS has a doubly periodic structure.

15. (Original) The reconfigurable FSS of claim 9, wherein the modification of the electrical interconnection configuration is achieved by providing electrical signals to an array of switches.

16. (Previously Presented) The FSS of claim 9, wherein the artificial magnetic conductor (AMC) is used as an electromagnetic reflector.

17. (Currently Amended) The FSS of claim 9, wherein the artificial magnetic conductor (AMC) is used as an electromagnetic ~~reflector~~ absorber.

18. (Previously Presented) The FSS of claim 9, wherein the artificial magnetic conductor (AMC) is used as a ground plane for an antenna.

19. (Currently Amended) An artificial magnetic conductor (AMC), the AMC comprising:  
a dielectric material having a first surface and a second surface;  
an electrically conducting layer substantially adjacent to the first surface of the dielectric material; [[and]]

a plurality of electrically conducting patches supported by the second surface of the dielectric material;

GIFFORD, KRASS, ORSH, SPRAXLE, ANDERSON & CITKOWSKI, P.C. 2701 TROY CENTER DR., SUITE 330, P.O. BOX 7021 TROY, MICHIGAN 48067-7021 (248) 647-6000

Serial No. 10/360,023

- 5 -

60524aka

wherein the electrically conducting patches have an electrical interconnection configuration, the electrical interconnection configuration being reconfigurable so as to change a resonance frequency of the reconfigurable AMC[.]; and

the electrically conducting layer being an electrically conducting sheet extending over the first surface of the dielectric material, the electrically conducting layer not functioning as a separate bandpass filter.

20. (Original) The AMC of claim 19, wherein the electrical interconnection configuration is controlled by a plurality of electrical switches.

21. (Original) The AMC of claim 20, wherein the electrical switches comprise transistors.

22. (Original) The AMC of claim 20, wherein the electrical switches comprise resonant circuits.

23. (Original) The AMC of claim 19, wherein the interconnection configuration comprises a repeated pattern of unit cell interconnection configurations.

24. (Original) The AMC of claim 19, wherein the interconnection configuration is reconfigurable using electrical signals.

25. (Original) The AMC of claim 19, wherein the interconnection configuration for incident electromagnetic radiation is reconfigurable through a change in the frequency of the incident electromagnetic radiation.

26. (Previously Presented) An artificial magnetic conductor (AMC), the AMC comprising:  
a dielectric material having a first surface and a second surface;  
an electrically conducting layer substantially adjacent to the first surface of the dielectric material; and

GIFFORD, KRASS, GROH, SPRUIKLE, ANDERSON & OTKOWSKI, P.C., 2701 TROY CENTER DR., SUITE 330, P.O. BOX 7821 TROY, MICHIGAN 48067-7021 (248) 647-6000

Serial No. 10/360,023

- 6 -

60524aka

a plurality of electrically conducting patterns supported by the second surface of the dielectric material;

the AMC comprising a plurality of regions, the resonance frequency of at least one region being independently adjustable.

27. (Previously Presented) The AMC of claim 26, wherein the resonance frequency of each region is independently adjustable.

28. (Previously Presented) The AMC of claim 26, wherein the electrically conducting patterns within the region each comprise a plurality of electrically conducting patches, the resonance frequency of the region being adjusted by changing the electrical interconnection configuration of the plurality of electrically conducting patches.

29. (Previously Presented) The AMC of claim 26, wherein the resonance frequency of the region is adjusted by modifying the dielectric constant of a tunable dielectric.

30. (Previously Presented) The AMC of claim 29, wherein the tunable dielectric is part of the dielectric material.

GIFFORD, KRASS, GROH, SPRINKLE, ANDERSON & CIEKOWSKI, P.C. 2701 TROY CENTER DR., SUITE 330, P.O. BOX 7021 TROY, MICHIGAN 48067-7021 (248) 647-6000